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A202
JACC April 1, 2014
Volume 63, Issue 12

Acute Coronary Syndromes

CAN A SECOND MEASUREMENT OF COPEPTIN IMPROVE ACUTE MYOCARDIAL INFARCTION RULE OUT?

Poster Contributions
Hall C
Sunday, March 30, 2014, 3:45 p.m.-4:30 p.m.

Session Title: Acute Coronary Syndromes: Treatment Considerations
Abstract Category: 1. Acute Coronary Syndromes: Clinical
Presentation Number: 1226-242

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Background: Management of chest pain patients with an initial negative troponin but an elevated copeptin level is unclear. We hypothesized that a second copeptin measurement two hours after presentation would help risk-stratify these patients.

Methods: The multi-center CHOPIN trial enrolled 2071 acute chest pain patients. 494 subjects with an initial negative troponin and elevated copeptin (>14 pmol/L) were included in this study. Copeptin and troponin levels were rechecked at 2 hours and the final diagnosis of acute myocardial infarction (AMI) was made by two independent, blinded cardiologists.

Results: Of the 494 patients analyzed, 378 (76.5%) had a persistently elevated copeptin at 2 hours and 116 patients (23.5%) had a copeptin that fell below the cutoff of 14 pmol/l. The AMI rate was 6.1% when the second copeptin was elevated compared to 0% when the second copeptin was not (p=.006), yielding a sensitivity of 100%. This strategy identified 23.5% of patients with an intermediate risk who could be ruled out for AMI while still in the ED. In contrast, a second troponin measurement had a sensitivity of 74%.

Conclusions: A negative second copeptin drawn 2 hours after presentation demonstrated 100% sensitivity for AMI, allowing for effective rule out in this intermediate risk cohort. This strategy identified nearly 25% of intermediate risk patients who could be considered for discharge, creating the potential for a significant reduction in the number of unnecessary chest pain admissions.

Figure: Second Copeptin vs. Second Troponin for AMI Rule Out in initial Trop-/Cop+

	2nd Copeptin	2nd Troponin
Sensitivity for AMI	100% *(95% CI 85.0 to 100%)*	73.9% *(95% CI 51.6 to 89.7%)*
Negative Predictive Value	100% *(95% CI: 96.8% to 100%)*	98.7% *(95% CI: 97.16 to 99.5%)*
Negative Likelihood Ratio	.00 *(95% CI: not applicable)*	.28 *(95% CI: .14 to .55)*